

Appl. No. 10/801,828
Amdt. Dated May 30, 2006
Reply to Office Action of February 28, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A single-gated thin film transistor used in a liquid crystal display device, comprising:

- a transparent homogeneous base substrate;
- a gate electrode made of metallic material, the gate electrode being disposed in the transparent homogeneous base substrate;
- a gate insulation layer disposed on the transparent homogeneous base substrate and gate electrode;
- a channel layer disposed on the gate insulation layer;
- a source ohmic contact layer and a drain ohmic contact layer arranged on opposite ends of the channel layer;
- a source electrode disposed on the transparent homogeneous base substrate and source ohmic contact layer; and
- a drain electrode disposed on the transparent homogeneous base substrate and drain ohmic contact layer.

Claim 2 (currently amended): The single-gated thin film transistor of claim 1, wherein the surface of the gate electrode is parallel with the surface of the transparent homogeneous base substrate.

Claim 3 (canceled)

Claim 4 (currently amended): The single-gated thin film transistor of

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claim 1, wherein the gate electrode comprises Cu, Al, Ti, Mo, Cr, Ta, Nd, or any alloy thereof.

Claim 5 (currently amended): The single-gated thin film transistor of claim 1, wherein a cross-section of the gate electrode is trapezoidal.

Claim 6 (currently amended): The single-gated thin film transistor of claim 1, wherein a cross-section of the gate electrode is rectangular.

Claim 7 (currently amended): The single-gated thin film transistor of claim 1, wherein the transparent homogeneous base substrate is made of glass or silicon oxide.

Claim 8 (currently amended): The single-gated thin film transistor of claim 1, wherein the gate insulation layer is made of silicon nitride or silicon oxide.

Claim 9 (currently amended): The single-gated thin film transistor of claim 1, wherein the channel layer is made of amorphous silicon or polycrystalline silicon.

Claim 10 (currently amended): The single-gated thin film transistor of claim 9, wherein the source and drain ohmic contact layers are formed by doping the channel layer.

Claim 11 (currently amended): A liquid crystal display device including a plurality of single-gated thin film transistors used to control and drive liquid crystal display material, wherein each of the thin film transistors comprises:

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a transparent base substrate;
a gate electrode made of metallic material, the gate being electrode disposed in the transparent base substrate;
a gate insulation layer disposed on the transparent base substrate and gate electrode;
a channel layer disposed on the gate insulation layer;
a source ohmic contact layer and a drain ohmic contact layer arranged on the two sides of the channel layer;
a source electrode disposed on the transparent base substrate and source ohmic contact layer; and
a drain electrode disposed on the transparent base substrate and drain ohmic contact layer.

Claim 12-20 (canceled)

Claim 21 (currently amended): A single-gated thin film transistor ~~used in a display device~~, comprising:

a transparent homogeneous base substrate defining a cavity in an upper face thereof;
a gate electrode filled in said cavity, said gate electrode being made of metallic material;
a gate insulation layer applied upon said ~~transparent~~ homogeneous base substrate covering both said ~~transparent~~ homogeneous base substrate and said gate electrode;
a channel layer applied upon said gate insulation layer and only covering a central portion of an upper face of said gate insulation layer;
a source electrode disposed upon one side of said channel layer and further covering a portion of said gate insulation layer wherein said

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portion is exposed to an exterior before said source electrode is applied thereto; and

a drain electrode disposed upon the other side of said channel layer and further covering another portion of said gate insulation layer wherein said another portion is exposed to the exterior before said drain electrode is applied thereto.

Claim 22 (currently amended): The single-gated thin film transistor of claim 1, wherein the gate electrode controls the thin film transistor to switch on or off.

Claim 23 (canceled)

Claim 24 (currently amended): The liquid crystal display device of claim 11, wherein the gate electrode controls the thin film transistor to switch on or off.

Claim 25 (canceled)

Claim 26 (currently amended): The single-gated thin film transistor of claim 21, wherein the gate electrode controls the thin film transistor to switch on or off.

Claim 27 (canceled)

Claim 28 (new): The liquid crystal display device of claim 11, wherein the base substrate is a homogeneous base substrate.